

passenger vessels of Hungarian construction), the pilot houses and the smokestacks are being installed. When the ships came down the Danube, the deck superstructures were removed because of low bridges.

### 30. A New Class of Dry Freight Motorship

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(Morskoy Flot [Maritime Fleet], Moscow, No 4, April 1962, pp 24-26)

Seagoing dry freight motorships (10,000 deadweight tons) are under construction for the Ministry of the Maritime Fleet at the Shipbuilding Yard imeni I. I. Nosenko in Nikolayev. These vessels will belong to the largest series among those being constructed during the 1959-1965 period and will form the basic nucleus of the dry freight transport fleet.

These modern-design vessels possess good seakeeping characteristics and are intended for general cargo hauls on all world sea lanes. They fully meet requirements of the International Conventions. Their architecture-design scheme is adapted to high-speed cargo handling methods insofar as possible with minimum expenditure of physical labor by stevedores and without the use of intra-hold machinery.

The "Poltava," lead ship of the series, will shortly enter service in the Black Sea Steamship Company's transport fleet. It is being built according to effective regulations under the supervision of the USSR Registry for Class \*LR 4/1 S (navigation in broken ice). Buoyance is assured with any one compartment flooded.

The motorship's length overall is 155.5 meters, length between perpendiculars 140 meters, beam overall 20.6 meters, moulded depth at the middle 12.3 meters, raised forecastle 3.1 meters, draft loaded 7.65 meters, designed draft to the cargo mark 9 meters, displacement with general cargo 15,200 tons, displacement with bulk cargoes 18,400 tons, deadweight with general cargo is 9,450 tons, with bulk cargo 12,650 tons, cargo capacity with general cargo 8,000 tons, cargo

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capacity with bulk cargoes 11,200 tons, cargo volume with cartons (counting the refrigerator hold) 16,880 cubic meters, cargo volume with bulk cargoes 18,400 tons. The engine is rated at 8,750 h.p., trial speed is 17 knots, cruising range is 10,000 miles, and the crew consists of 42 men with 8 apprentice billets.

The "Poltava" is a single-screw, two-deck vessel with paired hatches, double bottom, longitudinal bulkhead in the centerline plane, maximum freeboard, elongated forecastle, half-poop, superstructure aft, cutter bow and cruiser stern. The boiler-engine spaces and all living and service quarters are located aft (see Fig. 1).

Such a design has a number of advantages: the most accessible compartments of the vessel are set aside for cargo; capacity of cargo holds and space for deck cargo is increased; favorable conditions are created for ballasted passage, etc. Everything being equal, the economic indices of these vessels are five to seven percent higher than for those with amidships engineering spaces.

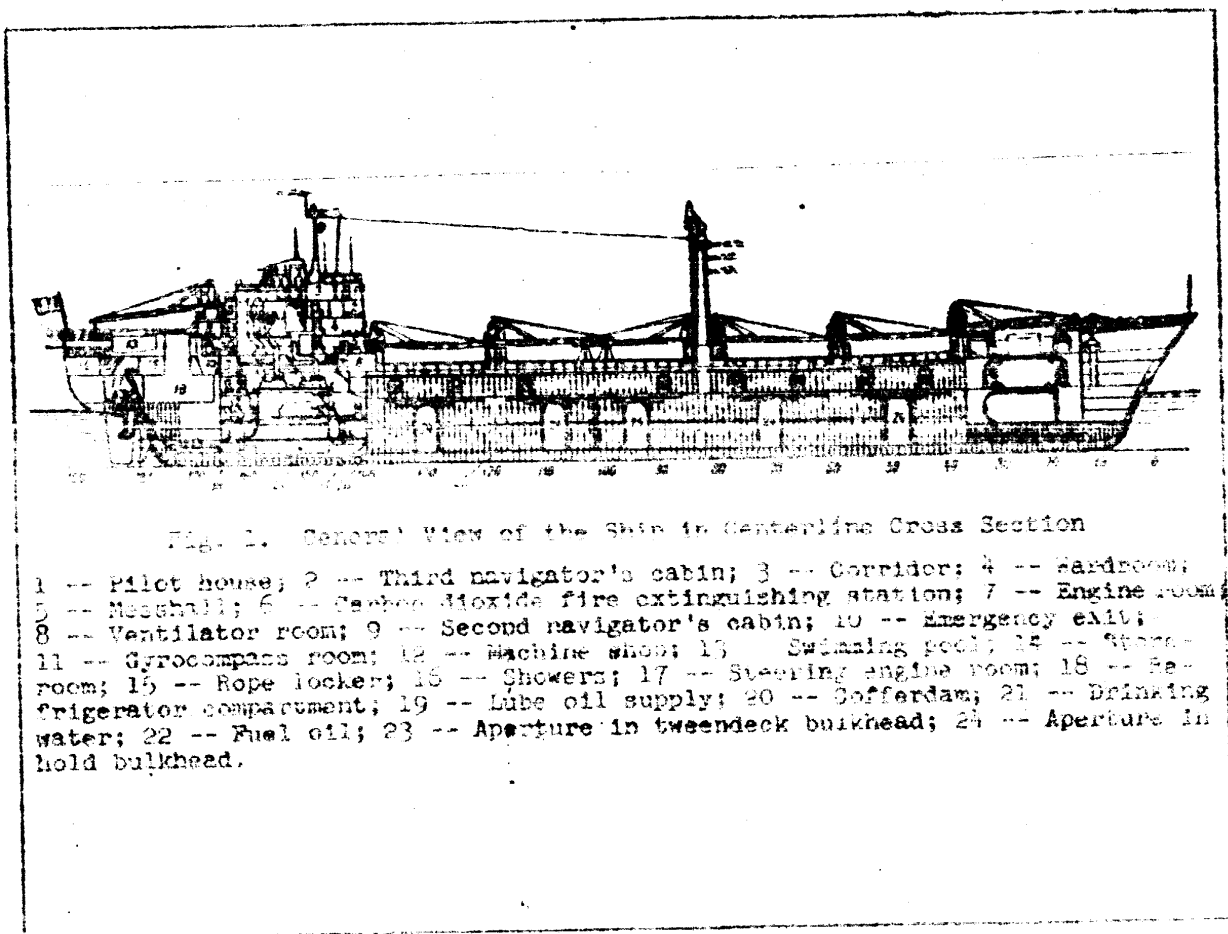
Transverse bulkheads divide the vessel into eight watertight sections: forepeak, five cargo holds, the boiler-engine room, and afterpeak.

Double bottom compartments contain fuel, lube oil, ballast and drinking water. Side compartmentation is used for ballast tanks.

The vessel's hull is welded. Only the joints between the sheerstrake and deck stringer are riveted. The framing system is mixed. The upper deck, double bottom, and amidships bilge are assembled by the longitudinal system; the sides, lower deck, and bilge forward and aft by the transverse system.

Low-carbon manganiferous 09G2 Brand steel and Brand 48 steel were used in basic hull members.

The inclined stern is welded. Its lower portion is made of steel ingots, butt-joints welded; the upper portion is the bow form, made of concave sheets, 25 mm thick. The stern post is cast design -- three steel castings (SL-2 Brand) joined by electroslog welding.



A shipboard, low-speed, six-cylinder, vertical, two-stroke, compressorless, simple-action 67CHVTBF160 engine with gas-turbine impulse supercharger and direct transmission to the screw propeller is installed. It develops 7,500 effective h.p. at 115 rpm (cylinder diameter, 740 mm; piston stroke, 1600 mm). Specific fuel consumption during engine operation at full capacity and at a cooling environment temperature of not more than 20° Centigrade is 158-163 g/effective hp-hr. Lube oil consumption is 9.2 kg/hr.

The above engines are being installed on the first two vessels; later vessels will be fitted with the same kind, except that the aggregate capacity will be 8750 effective h.p.

Two compressors (333 cu m/hr of free air each) are installed in the engine room to provide the main and auxiliary engines with starting air. End pressure is 25 kg/sq cm.

The main engine is cooled with fresh water by means of three vertical, centrifugal, electric pumps with a capacity of 240 cu m/hr each.

The main engine piston cooling and lubrication system is by two vertical electric screw lube oil pumps (200 cu m/hr each). Fuel for the main engine is delivered by two horizontal electric screw pumps; capacity of one is 38 cu m/hr, the other 3.3 cu m/hr. Fuel oil is purified by two centrifugal separators (NSM 4/P, 3000 liters/hr). An NSM 4/P separator is installed to separate reserve and circulating lube oil. All are provided with a PM6 steam heater.

An auxiliary boiler plant is provided for quarters heating, hot fresh water supply, fuel heating, ballast air drying and conditioning system, and other shipboard needs. It consists of one water-tube boiler (capacity two tons/hr, working pressure five kg/sq cm) and one utility boiler (KUP 140/5.5 type, operating on exhaust gases of the main engine 2.5 tons/hr at a pressure of five kg/sq cm). The boiler plant is equipped with automatic device for fuel oil feed and water delivery.

The need for less labor-intensive work in the hold during cargo handling and below-decks stowage and for elimination of manual labor predetermined the arrangement of the cargo holds and hatches (see Fig. 2).

The arrangement provides hold No 1 with hatches 8.5 x 6.2 meters, Nos 2, 3, and 5 with hatches 13.5 x 6.2 meters,

and No 4 with hatch 24 x 32. The latter has a length of 27 meters specifically for transport of long-size article metal constructions and other long-dimension cargoes. Hatch dimensions allow use of the crane method of cargo operations -- lifting and lowering cargoes to any spot in the hold within the limits of the hatch aperture.

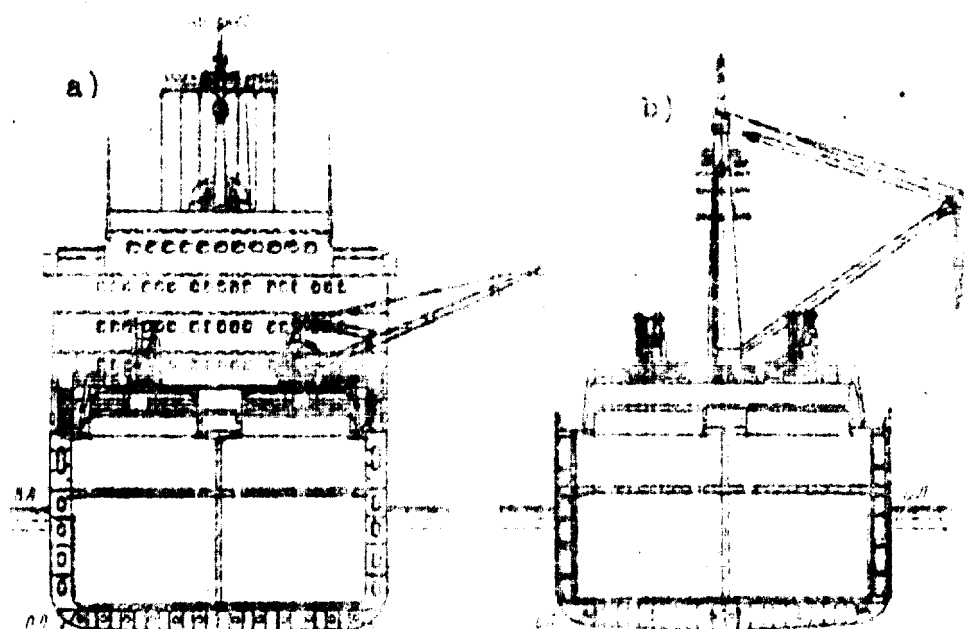


Fig. 2. Transverse Cross Section of Ship in Hatch Area (looking aft)

a -- At frame 106; b -- At frame 170.

The presence of side compartmentation creates right-angled hold forms with vertical walls. Protruding parts are absent. This is convenient for cleaning the holds and stacking cargo.

The fore and aft line bulkhead has openings [more than three meters in width] along the entire height of the hold. It substitutes for shifting boards during grain haulage without any kind of additional equipment. High hatch coverings (one meter) are adequate for conversion into feeders.

Upper deck cargo hatches are equipped with watertight steel covers which are rolled back under the cranes' gars tries and are closed by means of the cargo cranes. The covers are raised on base rollers, and hatches are battered

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crews messhall, reading room, swimming pool, and medical spaces.

All quarters are fully air-conditioned, with automatic regulation of temperature and humidity of air.

Quarters are insulated with fiberglass sheets, heads with crumbled-cork over mastic. Steel decks are covered with a layer of special mastic "Neva II," on top of which linoleum is laid in the cabins.

To conserve quick-spelling food products and for the ship's air conditioning system, a refrigeration plant is installed, operating by a system of direct cooling. The cooling agent employed is Freon-12. The plant is served from three freon compressor-condensators (MAK-FU-60 type); one is a standby.

### 31. Pressing Problems For River Workers

(Rechnov Transport [River Transport], Moscow, No 4,  
April 1962, pp 2-4)

The Party Central Committee, in connection with its March Plenum, has turned to all workers of the Soviet Union. In its appeal, it states: "The Soviet people are full of resolve to mark 1962 -- the first year after the 22nd Party Congress -- with great labor victories and to fulfill the tasks of the Seven-Year Plan's fourth year successfully. Even during the first months of the current year, much industrial output of consumer goods exceeded the quota. Agricultural workers are striving to make the Homeland rejoice with great successes."

Workers of river transport have also been inspired by the same aspirations. Having assumed new socialist obligations during the winter season, they are persistently realizing goals related to assuring success in the 1962 navigation period. Activist conferences of river workers which have taken place in the basins have indicated that river transport is fully capable of achieving an increased haulage volume. The material-technical base of our economy has been strengthened. Capacities of ships and ports have been expanded. Our cadres and their creative activities continually



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